

B.S. Natural Science Checklist

Physics Concentration

2015-2016 Catalog

Name: _____ ID Number: _____

GENERAL EDUCATION PROGRAM (27-31 hrs)

English Composition

COURSE	TITLE	HRS.
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Depending on placement, either 8 or 6 semester hours.

ENGL 1101	Discourse & Comp.	5
	<i>or</i>	
ENGL 1102	Discourse & Comp.	3 _____
ENGL 1105	Comp. & Argument.	3 _____

Fine & Performing Arts (Select 1)

COURSE	TITLE	HRS.
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ARTH 1101	Introduction to Art	3 _____
ENGL 2275	Amer. Film History	3 _____
MUSI 1201	Music Appreciation	3 _____
MUSI 2211	Music History I	3 _____
PHIL 3300	Philosophy of Film	3 _____
THAR 1000	Introduction to Theater	3 _____

Quantitative Reasoning (Select 1)

COURSE	TITLE	HRS.
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MATH 1100	Mathematics Core	3 _____
MATH 1200	College Algebra	3 _____
MATH 1250	Trigonometry	3 _____
MATH 1300	Precalculus	5 _____
MATH 1500	Principles of Statistics	3 _____
MATH 1700	Applied Finite Math.	3 _____
MATH 2110	Calculus I	4 _____

Social Science (Select 1)

COURSE	TITLE	HRS.
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ANTH 3350	Biological Anthr.	4 _____
GOVT 2250	Intro. to Political Sci.	3 _____
HIST 2430	World History I	3 _____
HIST 2440	World History II	3 _____
HIST 2530	World Prehist. & Arch	3 _____
HIST 4110	Intellectual History	3 _____
PHIL 3360	Social & Politic. Hist.	3 _____
PSYC 1101	Intro. to Psychology	3 _____
SOCI 1101	Intro. to Sociology	3 _____
SOSC 1110	Foun. of Social Sci.	3 _____

Ethics (Select 1)

COURSE	TITLE	HRS.
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PHIL 3320	Ethics Public/Priv. Life	3 _____
ROCI 4485	Reflec. Comm. Involv.	3 _____

Natural Sciences

The Natural Sciences component of the GEP will be met within the natural science degree.

Western Perspectives (Select 1)

COURSE	TITLE	HRS.
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ENGL 2211	Survey of English Lit. 1	3 _____
ENGL 2212	Survey of English Lit. 2	3 _____
HIST 3115	Women in Medieval Eur.	3 _____
HIST 3300	Christianity in Ea. Am.	3 _____
HIST 3520	History of Crusades	3 _____
IDST 2225	Civilization & Lit. 1	3 _____
IDST 2226	Civilization & Lit. 2	3 _____
PHIL 2200	Intro. to Philosophy	3 _____
RELI 2230	Hist. of Chr. Thought	3 _____

Non-Western Perspectives (Select 1)

COURSE	TITLE	HRS.
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ANTH 2250	Cultural Anthropology	3 _____
ARTH 3366	Non-Western Survey	3 _____
GEOG 2201	Cultural Geography	3 _____
GEOG 3351	Reg. Geog.: Middle E.	3 _____
GOVT 3320	Third World Politics	3 _____
HIST 3410	East Asian History	3 _____
HIST 3430	Anc. Indian Cu. of Soc	3 _____
HIST 3432	Gandhi & Mod. India	3 _____
HIST 3500	History of So. Africa	3 _____
HIST 3550	Islam: Rel., Pol., Soc.	3 _____
HIST 4420	Middle East (modern)	3 _____
IDST 2227	Civilization & Lit. 3	3 _____
PHIL 2284	Asian Philosophy	3 _____

Capstone

COURSE	TITLE	HRS.
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IDST 4490	Senior Seminar	3 _____
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(Checklist continued on reverse side)

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PHYSICS CONCENTRATION (26 hrs)

COURSE	TITLE	HRS.	
PHYS 2211	Calc-based Physics 1	4	_____
PHYS 2212	Calc-based Physics 2	4	_____
PHYS 2250	Modern Physics	4	_____
PHYS 3000	Intermediate Lab	2	_____
PHYS 3010	Thermodynamics	3	_____
PHYS 3020	Mechanics	3	_____
PHYS 4000	Elect. & Magnetism	3	_____
PHYS 4010	Quantum Mechanics	3	_____

ADDITIONAL SCIENCE/MATH (24 hrs)

COURSE	TITLE	HRS.	
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Math courses must be numbered 1200 or above

Area II _____ (12 hrs)

Select one area of science/math other than physics.
You may choose from biology, chemistry, geology or math.

_____	_____	—	_____
_____	_____	—	_____
_____	_____	—	_____

Area III _____ (8 hrs)

Select one area of science/math other than physics and your Area II selection. You may choose from biology, chemistry, geology or math.

_____	_____	—	_____
_____	_____	—	_____

Additional Science/Math (4 hrs)

Select any course in biology, chemistry, geology, physics, or math not used above. Math courses must be numbered 1200 or above.

_____	_____	—	_____
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COMM 1103 (3 hrs) PUBLIC SPEAKING AND HUMAN COMMUNICATION

MATHEMATICS PROFICIENCY REQUIREMENT

Each student must show proficiency in MATH 1250 (Trigonometry) either through placement at a higher level or completion of this or a higher level math course.

GENERAL ELECTIVES

Once all other requirements have been met (GEP, Physics Concentration, Additional Science/Math and Math Proficiency) you must take enough General Electives to meet the 120 hour requirement.

_____	_____	—	_____
_____	_____	—	_____
_____	_____	—	_____
_____	_____	—	_____
_____	_____	—	_____
_____	_____	—	_____
_____	_____	—	_____
_____	_____	—	_____

ADDITIONAL MINIMUM REQUIREMENTS

120 semester credit hours	_____
2.00 overall, cumulative GPA	_____
60 semester credit hours at 2000 level or above	_____

SPECIAL MINIMUM REQUIREMENTS FOR TRANSFER STUDENTS

30 semester credit hours completed at SSU, of which 21 credit hours must be upper division courses (3000-4000 level)	_____
12 semester credit hours in the natural sciences completed at SSU at the 3000 or 4000 level of which 8 must be in physics	_____

BS Natural Sciences (Physics)—Suggested Four-Year Course Schedule

Year 1			
Fall Semester		Spring Semester	
MATH2110: Calculus 1	4	MATH2120: Calculus 2	3
Science Area II	4	Science Area II	4
ENGL1102: Discourse and Composition	3	ENGL1105: Comp. and Argumentation	3
COMM1101: Public Speaking	3	Fine Arts GEP	3
General Electives	1	General Electives	2
Total Hours:	15	Total Hours:	15
Year 2			
Fall Semester		Spring Semester	
PHYS2211: Calculus Based Physics 1	4	PHYS2212: Calculus Based Physics 2	4
MATH2130: Calculus 3	4	Social Science GEP	3
General Electives	3	Science Area II	4
Additional Math/Science Course	4	General Electives	4
Total Hours	15	Total Hours	15
Year 3			
Fall Semester		Spring Semester	
PHYS2250: Modern Physics	2	PHYS3000: Intermediate Lab	2
PHYS3010: Thermodynamics	3	PHYS3020: Mechanics	3
Western Perspectives GEP	3	Non-Western Perspectives GEP	3
Science Area III	4	Science Area III	4
General Electives	3	General Electives	3
Total Hours	15	Total Hours	15
Year 4			
Fall Semester		Spring Semester	
PHYS4000: Electricity & Magnetism	3	PHYS4010: Quantum Mechanics	3
Ethics GEP	3	IDST4490: Senior Seminar	3
Additional Science/Math	4	General Electives	9
General Electives	5		
Total Hours	15	Total Hours	15
Total Hours: 120			

Note about General Electives: General electives may be rearranged to have more or less in any particular semester. For example, a student may want to combine several of the general electives in order to take a 3 or 4 credit course. They have been placed as they are on this schedule so that no semester has over 16 hours.

Guide for the Natural Sciences Student

Freshman Year	<p>Meet with your academic advisor to form a plan for your degree. Talk with your advisor about future career goals.</p> <p>Pick up the every-other-year course list, degree checklist, and four-year plan.</p>	<p>Join a club! Pre-Med / Chemistry / World Before Us / Geology.</p> <p>Like the Department Facebook page to learn about goings on. http://bit.ly/SSU_Science</p> <p>Follow us on Twitter too: @SSU_Science</p>	<p>Start drafting your résumé</p> <p>Visit Student Career Development Office : ADM036</p> <p>Spring semester: Create a profile and upload resume to College Central: www.collegecentral.com/shawnee</p>
Sophomore Year	<p>Meet with your academic advisor and make sure that you are on track with your degree.</p> <p>Learn about our minors, and consider signing up for one.</p>	<p>Talk to faculty members about becoming a lab assistant.</p> <p>Consider applying for a summer internship through the Student Career Development office.</p> <p>Consider joining a professional organization in your major, such as the ACS (Chemistry), GSA (Geology), etc.</p>	<p>Learn about our study abroad opportunities: www.shawnee.edu/offices/international-students/study-abroad.aspx</p> <p>Volunteer on/off campus to gain experience</p> <p>Meet with Peer Career to update your résumé</p>
Junior Year	<p>Meet with your academic advisor.</p> <p>Make sure you examine the every-other-year science course list and talk with your advisor about your graduation plan.</p> <p>Consider getting involved with an undergraduate research project. Talk to several professors about research possibilities.</p>	<p>Consider running for office in a student club</p> <p>Late fall semester, apply for a summer research experience for undergraduates (REU), such as NSF-REU: www.nsf.gov/crssprgm/reu/ or a summer internship.</p>	<p>Have the Career Development Office assist with updating your résumé and practice interviewing through Mock Interviews.</p>
Senior Year	<p>Meet with your academic advisor and be sure that you will soon meet all your degree requirements.</p> <p>Print off your degree audit, and cross reference with your degree checklist.</p>	<p>Get involved with tutoring through the student success center.</p> <p>Continue your involvement with a student club.</p>	<p>Start job search in fall semester. Update résumé, join LinkedIn, and consider taking advantage of your professional science organization's job database and other tools.</p> <p>If applying for graduate school, take the GRE and start applying in fall.</p>

Every-Other-Year Course Schedule

Natural Sciences

Note: This course schedule is subject to change. Be sure to talk to your advisor before you schedule your classes!

Course	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Irregular/As Needed
Biology													
BIOL2250 Plant Taxonomy	✓				✓				✓				
BIOL2252 Dendrology			✓				✓				✓		
BIOL2253 Practical Horticulture				✓				✓				✓	
BIOL3350 Entomology	✓				✓				✓				
BIOL3251 Summer Flora													✓ (Summers)
BIOL3254 Economic Botany													✓
BIOL3270 Plant Anatomy & Morphology		✓				✓				✓			
BIOL3271 Non-vascular Plants													✓
BIOL3359 Comparative Vertebrate Anatomy			✓				✓				✓		
BIOL3360 Animal Physiology		✓				✓				✓			
BIOL3640 Histology				✓				✓				✓	
BIOL3850 Ecology	✓				✓				✓				
BIOL3852 Marine Biology			✓				✓				✓		
BIOL3860 Field Methods													✓
BIOL3870 Evolution		✓				✓				✓			
BIOL4270 Plant Physiology													✓
BIOL4355 Animal Behavior		✓				✓				✓			

Course	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Irregular/As Needed
BIOL4360 Herpetology				✓				✓				✓	
BIOL4370 Mammalogy				✓				✓				✓	
BIOL4491 Limnology	✓				✓				✓				
BIOL4670 Neuropharmacology	✓				✓				✓				
BIOL4680 Parasitology			✓				✓				✓		
BIOL4760 Diagnostic Microbiology	✓				✓				✓				
BIOL4765 Virology				✓				✓				✓	
BIOL4780 Immunology			✓				✓				✓		
BIOL4850 Forest Ecology & Management													✓
BIOL4851 Wildlife Ecology & Management													✓
Chemistry													
CHEM3325 Analytical Chemistry 2		✓				✓				✓			
CHEM4431 Physical Chemistry 1			✓				✓				✓		
CHEM4432 Physical Chemistry 2				✓				✓				✓	
CHEM4441 Adv. Inorganic Chemistry		✓				✓				✓			
Natural Science													
NTSC3860 Environmental Science			✓				✓				✓		

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Last Updated: September 25, 2014

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